Furthermore, in alternative configurations, the spring mechanisms represented may be formed differently and elsewhere. Equally the unlocking mechanism 2 with the formation of a lever is to be understood merely by way of example. Other unlocking mechanisms which provide raising or lowering of the module 1 in the z direction may equally be provided.

Patent claims

1. Optoelectronic arrangement having:
   - a printed circuit board, which defines a first y direction parallel to the printed circuit board surface and a second z direction perpendicular to the printed circuit board surface,
   - a first electrical contact-making region of the printed circuit board with a plurality of first contacts,
   - a receptacle structure arranged on the printed circuit board and having a receptacle opening for receiving a pluggable optoelectronic module,
   - a pluggable optoelectronic module,
   - a second electrical contact-making region of the optoelectronic module with a plurality of second contacts,
   - plug-in means for plugging the optoelectronic module into the receptacle structure in such a way that, during the plug-in operation, the module is firstly introduced into the receptacle structure in the y direction and is then lowered in the z direction in the direction of the printed circuit board,
   - the second contacts of the optoelectronic module being in electrical contact with the first contacts of the printed circuit board in the plugged-in position.

2. Arrangement according to Claim 1, the plug-in means comprising a locking/unlocking mechanism formed on the module, by means of which mechanism the module can be raised or lowered in the z direction.

3. Arrangement according to Claim 1, the module having a module housing with an end side, a rear side,

a top side, an underside and two side walls, it being possible for at least one optical plug to be plugged into the module via the end side.

4. Arrangement according to Claims 2 and 3, the locking/unlocking mechanism having a lever with two end positions that can be actuated from the end side of the module, the module being in a locked state in one end position of the lever.

5. Arrangement according to Claim 4, the locking/unlocking mechanism having two arms acting as a lever, which are mounted in rotatable fashion at opposite side walls of the module housing in each case in a bearing location.

6. Arrangement according to Claim 5, the arms, on the other side of the bearing location, in each case being shaped in such a way that they form at least two end regions at a different distance from the bearing location, one of said end regions coming into contact with the printed circuit board or the receptacle structure in one end position and the other of said end regions coming into contact with the printed circuit board or the receptacle structure in the other end position.

7. Arrangement according to Claim 6, the arms branching at their ends in each case in Y-shaped fashion to form two sub-arms in such a way that one sub-arm is in contact with the printed circuit board or the receptacle structure in the one end position and the other sub-arm is in contact with the printed circuit board or the receptacle structure in the other end position.

8. Arrangement according to Claims 2 and 3, the locking/unlocking mechanism having elements which

protrude from at least one outer area of the module housing in the locked state of the module.

9. Arrangement according to Claim 1, the plug-in means comprising guiding means which provide a guiding of the module in the receptacle structure during the movement of the module in the y direction.

10. Arrangement according to Claim 1, spring means being provided, which press the plug-in module onto the printed circuit board with a spring force directed perpendicular to said printed circuit board.

11. Arrangement according to Claim 10, the spring means being formed on the receptacle structure.

12. Arrangement according to Claim 1, for the positioning of the module in the y direction, the module forming first positively locking elements and the printed circuit board forming second positively locking elements, which intermesh when the module is plugged in.

13. Arrangement according to Claim 12, the positively locking elements of the module being formed by at least two projecting pins and the positively locking elements of the printed circuit board being formed by correspondingly arranged holes.

14. Arrangement according to Claim 1, a latching mechanism being provided, which impedes the modules in the plugged-in position from moving in the z direction away from the printed circuit board.

15. Arrangement according to Claim 14, the latching mechanism having spring elements which latch with structures of the module during the plug-in operation after the lowering of the module in the z direction.

16. Arrangement according to Claims 2 and 14, the locking/unlocking mechanism deactivating the latching mechanism when the module is raised in the z direction.

17. Arrangement according to Claim 1, the second contacts of the module and the first contacts of the printed circuit board in each case being arranged in the form of a two-dimensional matrix.

18. Arrangement according to Claim 3, the second electrical contact-making region of the optoelectronic module with the plurality of second contacts being formed by a plug base arranged on the underside of the module housing.

19. Arrangement according to Claim 18, the second contacts arranged at the plug base being formed in elastically deformable fashion.

20. Arrangement according to Claim 1, some of the second contacts being formed in mechanically leading fashion, in such a way that a defined electrical contact-making order is provided during the plugging-in and during the removal of the module.

21. Arrangement according to Claim 1, the first electrical contact-making region of the printed circuit board being formed directly on the surface of the printed circuit board, and the first contacts being formed by metallizations directly on the surface of the printed circuit board.

22. Arrangement according to Claim 1, a heat sink additionally being provided, which projects into the receptacle structure via an opening at the top side of the receptacle structure and makes large-area

mechanical contact with the module in the plugged-in position.

23. Arrangement according to Claim 22, spring means additionally being provided, which press the heat sink against the plugged-in module with a spring force.

24. Arrangement according to Claim 23, the spring means being supported at the receptacle structure and correspondingly additionally pressing, in the plugged-in position of the module, the second electrical contact-making region of the module against the first electrical contact-making region of the printed circuit board.

25. Arrangement according to Claim 24, the spring means having two side parts running parallel which are respectively connected to one side of the receptacle structure, and at least two spring arms that are formed in resilient fashion and connect the side parts, the spring arms partly resting on the heat sink and exerting a spring force on the heat sink in the z direction.

26. Arrangement according to Claim 1, the receptacle structure being formed by a shielding cage comprising an electrically conductive material.

27. Arrangement according to Claim 26, the shielding cage having at its underside a plurality of protruding pins via which the shielding cage is mechanically fixedly connected to the printed circuit board.

28. Arrangement according to Claim 27, the shielding cage being electrically connected to a shielding potential of the arrangement via the protruding pins.

29. Arrangement according to Claim 26, the printed circuit board having a metallization in the region covered by the shielding cage and, except for in the first electrical contact-making region, at its top side.

30. Arrangement according to Claim 1, the module being formed as a parallel optoelectronic module via which data can be emitted or received in parallel on a plurality of optical channels.